

UNIVERSITY OF CALIFORNIA, SAN DIEGO



3 1822 02467 4673

# THE RAILWAY REVOLUTION IN MEXICO

BERNARD MOSES

A

0  
0  
0  
6  
6  
6  
3  
3  
9

7



UC SOUTHERN REGIONAL LIBRARY FACILITY

f California  
Regional  
Facility

LIBRARY  
UNIVERSITY OF  
CALIFORNIA  
SAN DIEGO



5448

THE  
RAILWAY REVOLUTION  
IN  
MEXICO

---

BY  
BERNARD MOSES, PH. D.

Professor in the University of California

---

SAN FRANCISCO  
THE BERKELEY PRESS

1895

COPYRIGHT, 1895,  
BY BERNARD MOSES.

## PREFACE.

THE first charter for a railway in Mexico was granted in 1837. It covered the distance between the City of Mexico and Vera Cruz, with a branch to Puebla. But the project involved in this concession was not carried out. Several years later, however, under a new charter, a railway connecting these cities was built, and for many years, while it controlled the traffic between the capital and the principal port of the Gulf coast, it possessed economic advantages which no other Mexican railway has had. The early movement was not prophetic of an early development; the greater part of the existing railways of Mexico have been built in the last two decades. At present they constitute a well-planned, well-equipped, and efficiently manned system of rapid transportation, which embraces 6,687 miles of track, operates 632 locomotives, 1,032 passenger cars, 11,331 freight cars, and reaches all of the important centers of population.

The notes embraced in the following pages were made, with the exception of a few paragraphs, during a vacation journey extending over nearly all the railway lines of Mexico, and they are here printed with no essential modification of the form in which they were originally set down.

Digitized by the Internet Archive  
in 2007 with funding from  
Microsoft Corporation

## CONTENTS.

I. Order . . . . .	7
II. Population . . . . .	21
III. Agriculture . . . . .	38
IV. The Cities . . . . .	73





## CHAPTER I.

### ORDER.

AN adequate explanation of the fact that Mexico's latest period of prosperity falls in the years of the commercial depression of certain other nations, involves the consideration of a number of contributing forces; but it is possible to describe one or two of these without thereby intimating that the others do not exist. This is what is done when some of the more general results of the introduction of railways are pointed out.

One of the most striking things in the economic history of Mexico is the completeness and persistence of her isolation. By destroying this isolation, she has suddenly been brought under the influences that make for social changes, and we discover here an excellent example of the transition from a stagnant to a progressive society. In order to determine to what extent the building of railways has been influential in effecting these changes, we have to take account of the fact

that the Spaniards acquired from the Moors, during their long association with them in the Peninsula, an indifference to roads suited to vehicles with wheels, and that the colonists who went out from Spain in the sixteenth century carried this indifference to the New World. Settlements were made and cities grew to importance, with no other means of communicating with the world at large than that offered by the Indian trail or the mule path.

This was not a matter of great moment so long as Spain's colonial restrictions on trade were maintained. A few Indians or a few donkeys would carry at a single trip all that any town received from Spain in the course of a year; and the colonists were thus thrown back upon their immediate efforts for the satisfaction of their wants; and the king, by prohibiting trade between the colonies, emphasized their isolation, and indicated the uselessness of means of communication. This restrictive policy of Spain with regard to her colonies tended to place the European settlers on the economic basis of the Indians. A short period of the kind of life to which they were reduced made them forget most of the wants that had belonged to their previous station, and made it comparatively easy to provide what seemed to be an adequate satisfaction of those remaining.

But by the imperfection of the means of production, and of internal transportation, a vast amount of force was consumed without great results. It is not enough to say of this case that labor was cheap, and to find in this a justification of its unprofitable use. Labor was cheap because, through the force of custom and the restrictions of the law, it continued to be used in such ways that its product could afford no larger compensation.

By referring to Spain's restrictions on trade with and in America, the accomplishment of ends with rude means, and the employment of human and animal power directly with little use of mechanical appliances, we indicate the early character of Mexico's economic system, a system which became so thoroughly rooted in custom that its main characteristics were preserved well into this century; and some of its features are conspicuous in the Mexican life of the present. Fruit is still carried into the City of Mexico on the backs of men, over distances requiring journeys of several days; and when you buy it there in the market, you think it still cheap, from which may be inferred how little must be the daily compensation of these men, and, in relation to the result, how great the expenditure of force.

The revival in Mexico is a result of the at-

tempt now making to set aside an antiquated economic system and introduce that which the most progressive nations have adopted. Probably the most conspicuous force thus far observable as helping to effect this change, has come through the introduction of railways.

When the railway was introduced into England and France, it came as a rival to all sorts of wheeled vehicles drawn by properly fed and trained animals over roads that were excellent specimens of well-executed public works. When the railway was introduced into Mexico, it came as a rival of the half-starved donkey and the not overfed Indian. The transition from the freight wagons and passenger coaches on the great roads of France was less striking than the transition from the beasts of burden on the rough trails of Mexico. The time of the revolution in the two cases was also important. In the one case it happened before the habit of much travel and the practice of extensive shipments had become fully developed; in the other case it came when the leading nations had become filled with the turmoil of travel and the transportation of goods, when these, in fact, had become the characteristic features of modern civilized life.

A conspicuous means by which the introduction of railways has contributed to the

economic revival in question is the influence which they have exerted on political affairs. As long as the history of politics in Mexico was the history of successive revolutions, one party after another laying lawless hands on private property, economic improvement was impossible; for security, the essential condition of such improvement was wanting. Manufactures would not flourish when the factories might be plundered without redress. Goods would not be transported when they might be seized by one party or the other, under the pretext of military necessity.

And the means for escaping from this state of things were not at hand. Over the territory of the republic, extending from northwest to southeast a distance of 1,900 miles, and covering an area of 768,500 square miles, it was impossible to move soldiers and the munitions of war with sufficient rapidity to prevent uprisings, at points remote from the capital, from gaining numbers and prestige. Before the Federal forces could intervene, a local government might be overthrown, and the excluded authorities themselves be placed in the attitude of revolutionists. Rapid transportation, therefore, became necessary for the preservation of peace and the maintenance of legitimate authority; and this has been furnished by the railways.



The revolutionist has now not adequate time to gather and effectively organize his forces before he is overwhelmed by a superior force acting under orders from the capital. Thus the first important service which the railways have rendered to Mexico is to make possible the maintenance of civil order and the security of property—by this means furnishing a direct incentive to industry and commerce.

And the demand for peace and security is bred by peace itself, and grows stronger and becomes more universal the larger becomes the number of persons who have accumulations at stake. Already the desire for peace constitutes a phase of a new national sentiment. In the words of one of the most thoughtful writers on economic affairs in Mexico, "the Mexican people do not want to return to the habits of revolutionary days. They are becoming accumulators of wealth, and a new generation has grown up, composed of young lawyers, planters, and men of affairs, who lead laborious lives and are well fitted to guide the destinies of the republic in the early years of the coming century."

Revolutions have not only ceased to be desired, but they have also ceased to be feared. Those who know how firm is the hand at the helm, and how complete is the information

possessed at the capital concerning the condition of affairs in the remotest parts of the country, are confident that no revolution could possibly attain threatening proportions. They are conscious, however, that for this state of things the nation is very largely indebted to the sagacity and firmness of one man, which qualities, together with his marvelous command of the details of administration, have made him master of the situation, and the effective ruler of the nation under his authority. Knowing these things, and, consequently, how much depends upon a single life, it is only natural that many persons should manifest anxiety with reference to the succession to the throne.

• The building of railways not only made possible the establishment of peace and security, but it also made imperative the demand for them. Having granted certain privileges which caused large amounts of capital to come into the country, the government was virtually pledged to maintain such conditions as would not be an active cause of the loss of value on the part of that capital; and everyone informed of the recent political history must confess that the government has very generally lived up to its implied pledge.

This was not easy, for, to quote from an

official publication, "Lack of order, immorality, in fact, crime was in Mexico almost the rule of the day, and this not alone on the highways, but even in some of the largest cities." To those whose gains from highway robbery had not been very great, the railway trains, with their freight and baggage and the ready money of the passengers, offered a more favorable field for spoils than had previously existed. The Secretary of the Interior appreciated this fact, for on one occasion he said "that in the beginning, immediately after the establishment of our great railroads, attacks were made under a new form, more cruel and atrocious than ever. The robbers used every means to throw the train off the line, in order that when this was once done, they might possess themselves of the baggage, merchandise, etc."

The knowledge of the general designs of the robbers, and a specific instance of train wrecking and robbery on the Mexican Central, roused the indignation of the better elements in the nation, and moved the government to take decisive action, which placed those who violated the security of railway property in an extraordinary position. This position was essentially that of outlaws.

This fact becomes clearly evident by a brief



reference to the laws which have been recently passed concerning this matter. The first twenty-nine articles of the Federal Constitution of Mexico constitute an elaborate bill of rights. The first part of Article 13 provides that "in the Mexican republic no one may be judged by private laws, nor by special tribunals." Article 20 affirms that "in every criminal trial the accused shall have the following guarantees:—

"1. He shall be informed of the basis of the proceeding and of the name of the accuser, if there be one.

"2. His preparatory declaration shall be taken within forty-eight hours, counted from the time of his arrest.

"3. He shall be brought face to face with the witnesses against him.

"4. He shall have access to the information necessary to enable him to prepare his defense.

"5. He shall be heard in his defense either in person or by an attorney, or both, as he may wish. In case of his having no one to defend him, he may choose from a list of persons appointed to this office."

Article 21 declares that the application of penalties shall be made exclusively by judicial authority.

These elementary rights or guarantees con-

firmed by the Federal Constitution were suspended with reference to all road robbers by the decree of May 17, 1886. This was done under the provisions of the last article of the constitutional bill of rights, which declared that in cases of invasion, serious disturbance of the public peace, and other cases in which society might be placed in great danger, the proper authorities might suspend these guarantees granted by the Constitution.

- The first article of the decree referred to simply enacted the suspension. The second article defined road robbers, thus specifying those regarding whom these guarantees were suspended. They were those intending to stop trains on a public road, with the purpose of robbing the passengers or stealing the goods carried, and to this end in any way destroy or carry off any part of the property belonging to the railway, in a word, those who lay hand on railway property when not empowered to do so, with the purpose of injury.

These persons, elaborately described in the decree, are by this decree practically placed without the law. "If caught in the act, they shall suffer the punishment of death, without further trial or proceeding than the mere drawing up of a record by the chief of the apprehending force, in which record shall be set

forth the fact that they were taken in the act, and the identification of their persons."

This medicine was supposed to be strong enough to effect a cure in the few years it was decreed to be applied. The time the law was to continue in force having elapsed some time since, it has been deemed advisable this year to suspend again the constitutional guarantees, and to enact a similar law, which has been stated, in substance, as follows: "Whenever any individual stops, derails, or interferes with a train, removes fastenings from the track, puts obstacles on track, or destroys any locomotive, cuts telegraph wire, or destroys or removes any of the apparatus, thus cutting off communication, should any such action result in the death of one or more passengers, robbery, or *any other damage*, and the criminals are caught in the act, they shall be shot without trial, but the commander of the force apprehending the criminal shall report the fact to the proper authorities. When the criminals are not caught in the act, but afterwards, they shall be tried by the nearest authority within fifteen days, and, if guilty, shall be condemned to death. If the party guilty is only an accessory to the crime, his sentence shall be from five to twelve years' imprisonment." This law has already been promulgated, and will continue in force for one year.

The railways, by their presence, have brought to a crisis the question of security on the lines of public transportation. But for them and their influence on the authorities, robbers might have carried on their petty depredations on stages and mule trains, without arousing the government to determined and effective action. The development of the railways has given to the question of security an entirely new aspect. The magnitude of the interests involved have made the demand for security imperative.

Here was a case where the government had clearly before it a condition and not a theory; and the condition had to be changed. Later it might be possible to speculate and quibble about individual rights. Here the supreme right of society at large presented itself and demanded recognition; and it is refreshing to find a government rising to the importance of the problem before it. It did not entangle itself in an intricate web of speculation as to individual rights, but recognized the fact that great social interests were endangered, and that there was a serious social disease which needed a remedy. It recognized, moreover, the solemn truth that it is better for society that a person who attempts to wreck a train, whether successful or not, should be dead rather than alive. He is an enemy of mankind and an

outlaw, and should be treated accordingly, and under the existing law he is so treated.

The result is, railway traffic goes on undisturbed. With no newspapers to publish their illustrated biographies, liable to be shot with impunity by anyone discovering them at their work, and with many of the brotherhood buried where they fell, robbers of trains in Mexico have very little prestige at present. Thus not only railway transportation has become safe, but other lines of transportation have participated in the good result.

If the railways, by the presence of their large amounts of capital, have brought on the crisis, and thus forced a remedy for a long-standing evil, the government itself is in a very large degree directly benefited by the result. About the time of the opening of the Mexican Central Railway the Federal government had not sufficient funds at hand to meet its current expenses, and the outlook for foreign creditors was not hopeful. The budget for 1895-1896 shows a surplus, and the state of Mexico's credit abroad has undergone a very flattering change. It would, of course, be unjust, in estimating the causes of this happy revolution, to leave out of account the remarkable ability of Mr. Limantour, the present Secretary of the Treasury, who, though still a comparatively

young man, has won a distinguished place among the leaders of the present administration.

Yet the achievements he has made have been rendered possible by the security which has come to the affairs of the country through forces entirely independent of his action. Foreign creditors accept the railways, with the multitude of other interests which they have called into existence, as a sufficient guarantee that their investments will be honestly recognized.



## CHAPTER II.

### POPULATION.

THE introduction of railways has not only affected the action and standing of the government, but has also set in motion certain influences which tend to modify the character of the population. At present the nation is a heterogeneous body, in which the contrasts of social conditions are as marked as were those of mediæval Europe. Many of those of the lower ranks are practically serfs. The importance of the strong class distinctions and the wide differences in material conditions become clear when we remember that the character of a nation's government and laws depends upon the character of the people, and the relation of the different elements to the whole. The legal or the political development of a nation is not represented by the laws on the statute books, but by the laws actually carried out in the government of the people. In order, therefore, that there may be healthy legal and constitutional growth towards enlarged liberty, it is

necessary that the various elements of the nation be welded into one homogeneous mass, to all parts of which the written laws may be made to apply without condition or reservation. The conviction must become a public opinion that when a law is made it is made for everybody, and only when this is the fact is the nation in a condition of liberal development. In the United States we may easily pretend to have reached this condition, since the Indians are reckoned as no part of the nation. But in Mexico the Indians and others of nearly the same social standing make up the bulk of the population. The political bearing of this fact is readily comprehended when we consider that a form of society, which is persistent, will determine the form of the actual government without special regard to the form that may happen to be prescribed by the written law. The small minority of the wealthy and cultivated in Mexico stand as completely apart from the great body of the common people as the nobility in any European nation; in fact, the form of Mexican society is not greatly unlike that which has always been found in connection with the monarchical form of government. While, therefore, Mexico has elaborately planned to be a republic, the unconscious force



of her social forms has driven her, in spite of plans, under a government which, in all the essentials of its spirit and practice, is a monarchy. And the evidence is not strong that the government is likely soon to throw off this character; for the Indians and others of the lower stratum of the population are apparently destined to retain yet many generations their relative position in the nation. Until the class of property owners more or less cultivated is much larger than at present, we may not reasonably expect great progress towards a real republic, and this increase in the immediate future is more likely to be made by immigration than by the rise of the members of the lower ranks. In fact, the lower stratum of the population may not be expected to rise with sufficient rapidity to be able to control and direct the new forces, which are becoming manifest in the country through the present industrial revival. Wherefore the demand which the railway age in Mexico is making for persons familiar with the affairs of modern industrial society will be met by a more or less extensive immigration. There are also other forces which appear to make such an immigration inevitable. One of these becomes evident in considering the different rates of increase of population in Mexico and the United States.

On account of the imperfection of the statistics it is impossible to determine accurately the rate of growth of Mexico's population in the last ninety years. But to affirm that it has increased from 5,000,000 to 11,000,000 is not to go very wide of the truth. With reference to the United States, it may be safely said that the population has increased in the same period from about 5,000,000 to about 70,000,000. And during this remarkable growth the larger nation has been as well fed and clothed as the smaller, which has grown more slowly; and there is no more need of taking account of a checking pressure of population against subsistence in the larger than in the smaller nation. There is, moreover, no more reason to anticipate a very great modification of the rate of increase in the one case than in the other, except as one overflows into the other. But a continuation of the hitherto existing rate of increase in the two nations will give Mexico a population of about 30,000,000 and the United States about 600,000,000, at the end of the next ninety years.

The two nations might come to stand in this relation to one another as to numbers, if there were no means of intercourse between them. But, for good or for evil, the barrier between them has been thrown down, and can

never be set up again; and the rates of growth indicated will be more or less modified by migration from the northern to the southern country.

This may not diminish materially the indicated result as it regards the United States, but the practical result as to Mexico will probably be a population much larger than that suggested. There are many reasons for affirming that the coming decades will witness such a migration. One of the most important is drawn from the character and social history of the people of the United States, large numbers of whom have been for generations a frontier people, and as such have always been ready to move forward whenever the pressure of population has become inconvenient. In fact, the most prominent characteristics of the people of the United States are those engendered by the frontier. Our national virtues are the virtues of frontiersmen, and our national vices are the vices of frontiersmen recently come to town. Our acceptance of political equality, and, in some measure, of social equality, has come chiefly from the equality of conditions in which we have found ourselves, whether on the frontier of New England or Indiana or Nebraska. And a large part of our country has as completely the characteristics

of the frontier to-day as at any other period.

As a people of the frontier, we are moved by a strong desire for change of place. The passage of years, bringing more convenient means for transportation, appears to have strengthened rather than to have weakened this desire. Running rapidly across the continent, as we have done, has not satisfied, but only stimulated our desire to move on to some other place, where, we are sure, life will be easier, and the good things of the world more abundant, and it is not to be supposed that, having reached the Pacific, the force which has carried on this great westward movement is suddenly to cease to be.

With the continuance of the disposition to migrate, the return towards the east will be unimportant, and the stream that might flow toward the north will be checked by the streams of western migration on either side of our northern border. There will remain, however, an outlet toward the south; and the opportunity here offered will be embraced, partly because of the attractiveness of the climate of the Mexican table-land, where the extremes of temperature which mark the seasons in the United States may be avoided, and where one may have ready at hand the products of all the zones. But a more powerful reason for this

southward movement may be found in the fact that the commercial sagacity and daring of the northern people may find here a comparatively easy victory. This is more important than any consideration of climate, or accessibility to the luxuries of living, for the dominant motive by which the great masses in a migration are moved is the desire for easier gain.

Already the belief is widely entertained that in the industrial and commercial contest the Mexican is destined to go down before his northern competitor, and this confidence spurs the American citizen to enterprises here which would not be undertaken in a land inhabited by Englishmen or Germans. If this assumed commercial and industrial superiority exists, it does not necessarily imply that the Mexican stands on a lower stage of civilization than the American; it indicates only that his cultivation is of another sort. We do not accord to the Chinaman a superior place in the grades of human society because, if left unhampered, he might win in an industrial competition with the white man in most departments of work. And yet we are in danger of concluding that because the Mexican would go to the wall in an industrial and commercial contest with Americans, he, therefore, represents a lower degree of civilization. The qualities of a suc-



cessful salesman, or of a daring organizer of business enterprises, are not the highest human qualities of which we have knowledge, although they do much to advance the material interests of society, and, by that, indirectly to promote its spiritual interests.

The Spanish people had once an opportunity to acquire those qualities which win in the commercial contest. For a thousand years they had lived in closer intimacy with the Jews than had any other nation. The two peoples had begun to intermarry with one another, and there seemed to be nothing in the way of a complete amalgamation, when the Jews were overwhelmed by the edict of exile, and by this their hopes were blasted. And by this also the Spanish threw away their opportunity of becoming able to engage with success in the industrial and commercial competition of the world. By incorporating the Jew and making him a part of the nation, they might have become endowed with his marvelous ability. By sending him into exile they rejected their only opportunity of becoming able to take conspicuous rank as an industrial and commercial people. With more extensive resources than any other nation, with the better part of a continent of untold wealth in their power, they have constantly played a losing game, and

the heritage of their peculiar incompetency has descended upon their children and their children's children, even to the present generation. The history of the Spanish people, both in Spain and in America, is the history of economic incompetency. The great enterprises of Spain are to-day in the hands of foreigners. It is foreign capital and foreign force and sagacity that are rousing Mexico from her slumber of centuries.

Given this superior efficiency of the foreigner in matters of business, there is only wanting the opportunity afforded by adequate means of communication to insure his peaceful invasion. And these means have been abundantly provided. Four distinct gateways to Central Mexico have been opened within a comparatively few years. Vera Cruz, of course, has been open for centuries. It was used as a port for Mexico when there was only one other port of the Spanish possessions in America open to the trade of Europe, which meant the trade of Spain. The other port was Porto Bello, on the Isthmus. For generations the only trade that existed between Spain and its American colonies passed between Seville, in Spain, and Porto Bello and Vera Cruz, in America. Once a year the tub-like ships of the Spanish, popularly known as the stately galleons, anchored

off Vera Cruz, discharged their cargoes of European wares, and took on board the products of Mexico. Then they sailed away, and the port slept for another year, till the return of the fleet.

In contrast with this isolation of the colonial days, mark the present relation of Mexico to the rest of the world. The port of Vera Cruz is open to the vessels of all nations, and two railways connect it with the capital and the other interior towns. By a system of jetties, constructed by the Mexican Central Railway, the bar that closed the harbor of Tampico has been scoured away, and ocean vessels now ascend the river Panuco seven miles, to the ancient town of Tampico. Here they may anchor in perfect safety and discharge their cargoes and passengers without lighterage or transfer. Thus there has been opened to Mexican shipping an inland harbor on the eastern coast, free from the storms which make the roadstead of Vera Cruz sometimes inconvenient and dangerous. And the new port of Tampico has already regular lines of steamers connecting it with New York, Mobile, Havana, and European ports. While this is the first inland port that has been opened on the eastern coast of Mexico the western shore has, it is true, good harbors; but they are of comparatively little advantage,



for two reasons: they are not readily accessible to the markets of Europe and the eastern part of the United States; and they have as yet no means of communication with the important cities of Central Mexico, except the pack mule and the burden-bearing Indian. But by the Mexican Gulf Railway, running northwestward to Monterey, and by the branch of the Mexican Central, which runs through San Luis Potosi, the port of Tampico is brought into immediate communication with the great internal system of Mexican railways.

Tampico is clearly destined to be the strong rival of Vera Cruz, which has long had a practical monopoly of Mexico's external trade toward the east. The New York and Cuba Mail Steamship Company's line of steamers make direct weekly sailings between New York and Tampico. Conspicuous among the other lines rendering regular service to and from this port are the Hamburg-American Packet Company, the Harrison Steamship Company, the West India and Pacific Steamship Company, and the New York, Mobile, and Mexican Steamship Company. The growth of the import and export business of the port may be seen in the following statement:—

## 32 *Railway Revolution in Mexico.*

Year.	Tonnage of Imports.	Tonnage of Exports.
1885.....	9,672	7,603
1886.....	10,824	10,696
1887.....	9,731	11,878
1888.....	13,817	7,893
1889.....	11,671	7,462
1890.....	21,188	8,074
1891.....	22,582	8,853
1892.....	80,670	28,702
1893.....	115,813	54,717
1894.....	143,306	48,780

The value of the exports, stated in Mexican dollars, during the same period, is as follows:—

1885.....	\$ 733,591	29
1886.....	916,407	09
1887.....	760,769	76
1888.....	635,460	80
1889.....	684,653	27
1890.....	910,738	54
1891.....	1,100,966	92
1892.....	5,910,390	63
1893.....	10,015,145	35
1894.....	13,465,830	00

The rapid and constant increase of exports and imports by way of Tampico since 1888 may be compared with exports and imports by way of Juarez, the northern terminus of the Mexican Central Railway. The imports to Mexico and the exports from that country at this point, were as follows:—

Year.	Imports—pounds.	Exports—pounds.
1889.....	33,472,550	128,375,414
1890.....	52,468,776	140,058,456
1891.....	77,454,031	207,670,788
1892.....	136,973,330	241,891,731
1893.....	46,665,395	100,014,387
1894.....	27,576,736	28,015,122

The Tampico figures show a strong increase, while the Juarez account shows an increase followed by a sharp decrease. The decrease is very largely due to the falling off in shipments of ore from Mexico to the United States, and this falling off is in turn due to the development of smelting works in Mexico at which the ore mined in Mexico is smelted.

Furthermore, travelers who wish to reach Mexico by sea from New York or New Orleans are likely to find Tampico an agreeable port of entry, and those who enter the republic by this route have a certain advantage over those who enter through Laredo, Eagle Pass, or El Paso, for in ascending to the table-land by the Tampico branch of the Mexican Central Railway, they are carried through some of the finest mountain scenery of Mexico. Those who enter by any one of the other three gates are obliged to pass over many miles of arid country before the natural beauties of Mexico rise above their horizon. Those from the western and middle portions of the United States will enter

by the northern gate, Paso del Norte, which has recently been named the City of Juarez, in honor of the champion of republican independence, who here held together his followers while Maximilian was playing emperor in the City of Mexico. They will approach this entrance to Mexico by either the Southern Pacific or the Santa Fé Railway, and by this route they will have the advantage of entering Mexico at a considerable elevation above the sea, as usually stated, 3,717 feet, sufficient to make fairly sure an agreeable summer and fall climate. Travelers from the southern States, who wish to visit Mexico without crossing the Gulf, will enter the country either at Eagle Pass, by the Mexican International Railway, or at Laredo, over the Mexican National, and these are the four gates that have recently been opened into Eastern and Northern Mexico: Tampico on the Gulf, and Laredo, Eagle Pass, and El Paso on the Rio Grande. These means of communication between Mexico and other nations, particularly between Mexico and the United States, are of the nature of a number of agencies whose efforts are directed to keeping active the migration of persons and the transportation of goods.

The railways have not only opened ways into the country, but are in themselves the moving

forces of an industrial revolution. For it is a mistake to suppose that the only function of a railway corporation, having once set its road in operation, is the somewhat passive one of receiving the business brought to it without its initiative. Capital in large masses must itself, through its agents, make the conditions of its own existence. It goes with its products to places where they have not been previously desired, and creates a demand for them. When a large amount of capital has been gathered and organized for doing a specific work, the principle of the life of that capital is having that work to do. Suppose that in the time of active railway construction in a given country a large plant for making rails has come into existence. When the roads which it was built to supply are completed, the original occupation of this capital appears to be gone. It must now be transformed at a loss, or lie idle at a loss, or those who act for it must become instrumental in creating a demand for its products elsewhere. Thus the existence of such plants in England, called into being by a strong domestic demand for rails, becomes a force in extending the railway systems of other countries. The managers may, rather than allow the capital to lie idle or be transformed, agree to terms which make the building of railways profitable in Russia or the



Argentine Republic. Thus the capital organized for the construction of rails and the equipment of railways becomes a permanent missionary of railway civilization. The same thing is true of the enormous amounts of capital organized for the construction of sewing machines. If certain nations are supplied so that there might be naturally a falling off in the demand, this must not be; otherwise the value of the plant is diminished; hence other people must be made to demand sewing machines. Thus the missionary force of the capital involved in the making of the machines has carried them to the four quarters of the earth. They may be found in huts in Mexico, where the dwelling itself and all else that it contains is not of half the value of the machine. These are only instances of the aggressive force of large masses of organized capital, prompted by the instinct of self-preservation in the organization.

The capital that has gone into Mexican railways is subject to the same law. It cannot be passive; it must be a reforming agency. The people among whom the roads have been constructed, whether they have hitherto felt the need of them or not, must feel the need of them. It is not a question of greater or less happiness—the railway has come and commanded other forms of life, and millions of



capital depend on this command being obeyed, and it will be obeyed. Men may not, hitherto, have wished to go to Mexico; they will be made to wish this thing especially. The ordinary man or the poor peon who has never left his native valley, will be indifferent at first. His mind is not easily inflamed. There will gradually be awakened in him a desire to see the great city, and the great city will inspire in him the wish for things he has never possessed. His wants will be increased; he will feel the necessity of work; continuous work will make him a man; and the railway will bring to him for his earnings things of which he never dreamed. What nobody wanted at first will at last be demanded by everybody; and organized capital in the form of railways will have succeeded in creating demands for its services by the compensation for which it may be maintained and increased. How far this revolution has been actually effected here remains to be seen.

## CHAPTER III.

### AGRICULTURE.

AMONG the more general economic effects of the building of railways in Mexico may be observed an increasing disposition to establish and conduct productive enterprises with corporate capital. A conspicuous weakness of the Spaniards in Spain, and of their descendants in Spanish America, has been their inability to form and conduct successfully industrial and commercial corporations.

The extreme individualist who thinks a disastrous step was taken when the law established the conditions, and permitted the existence of business corporations, will naturally find a national virtue in the disinclination to organize, or to carry on business by such corporations. As the question of the good or evil of commercial corporations is not under consideration, it is not necessary to controvert this opinion, but simply to call attention to the fact that one may have many virtues and still lack practical efficiency. If we may form a judgment from

the actual economic facts of our society, the business corporation is the most feasible and most effective means yet extensively practiced for conducting great industrial enterprises; and the nation that is not in a position to make use of this means, by reason of its virtues or its vices, is not in a position to compete successfully with its neighbors who are not thus hampered.

In both Spain and Mexico, therefore, the large undertakings, which require more capital than one man is likely to be willing to invest in a single venture, have fallen into the hands of foreigners who have not been opposed to the corporate form of business management. In Spain French corporations own and manage most of the railways, while English corporations work mines and control other important interests; and in Mexico these two lines of business have already absorbed large sums of English and American capital under corporate organization. The reluctance of the Mexicans to take advantage of this form of organization has made the way here comparatively easy for foreign corporations.

The reason of this reluctance is not found in lack of knowledge, but in the lack of confidence on the part of Mexicans in one another. They do not believe, apparently, that their fellow-

citizens are as honest in business affairs as the members of other nations. As an evidence of this may be noticed their comparative willingness to enter into commercial corporations in case a foreigner is to be at the head of it. In this matter they appear to have more confidence in a foreigner, whom they do not know, than in one of their own nation, whom they do know. But this must be regarded as a transitory state of things. The railway corporations are making the people of Mexico familiar with this form of investment, and since their advent there have not been wanting those who were willing to aid in organizing corporations for other purposes.

The missionary of the modern industrial system is in the field; and through his personal solicitations, and through the force of the example of corporations already organized, Mexico is destined to be carried more and more completely into line with those nations that have at present largely supplanted individual industry by corporate industry. By the intimate connection which has been established between this and the most advanced nations, the forces that have operated to produce in them an industrial revolution are working now with comparative freedom, and are bringing about a similar revolution in Mexico.

There appears to be no doubt that the property of the Mexican nation as a whole has already been greatly increased in value by the building of the railways. Rafael Herrera, an apparently conservative statistician, in setting forth the items which make up the nation's property, amounting to \$2,200,000,000, enters the railways at \$200,000,000. In the same account he shows that the private property in the States already traversed by railways has been increased \$125,000,000. But a greater indirect result may be reasonably expected in the increase which will come as a consequence of the improvement and extension of cultivation that the better means of communication will induce. The improvement of cultivation is brought about by facility in obtaining better agricultural implements, which are already being largely imported, those that reach the southern part of the country coming chiefly from England by way of Vera Cruz.

It is noticeable that thus far the improved implements introduced, particularly along the line of the Mexican Southern Railway, between Puebla and Oaxaca, are principally for harvesting, while in preparing the soil and planting there is still a vigorous adherence to old methods. The plow of the old style, with the prestige of several thousand years of use, holds its



place against all intruders with remarkable resistance. The claim that it is better suited to the conditions of the Mexican soil and climate than any other is supported only by a traditional prejudice, and others of superior fitness will ultimately be introduced, but they would come the sooner if the makers of them would consider carefully the conditions under which they must be used and adapt them as far as possible to these conditions.

The people of the United States are so absolutely sure that their ways are the only proper ways that they have not made the advances in Spanish American trade they might have made if they had been more disposed to adapt themselves and their work to the conditions and practices of other nations. It may be true that the customs of a nation, although supported by the traditions of many generations, are not the best conceivable. Still it may not be advisable, if we wish to trade with that nation, to make it especially conspicuous in the beginning that we know they are wrong and we are right, and that they must change and accept our practices immediately.

If the Mexicans wish a plow with only one handle, it is not worth while to stand on their accepting a plow with two handles as if it were a high moral question. Moses gave his fol-



lowers not the best laws he could invent, but the best they were prepared to receive; so ordinary business sense should have suggested to Americans to give the Mexicans not the best agricultural implements that could be invented, but the best the Mexicans were prepared to receive. In the course of their attempts to trade with Spanish America, the merchants and manufacturers of the United States have not always lived up to this principle. Year after year they have continued to pack goods for Bogotá, or Quito, or a town in Mexico not reached by rail, as they would pack them to be sent from New York to Albany, or from Chicago to San Francisco, paying no attention to the fact that all goods sent to Spanish America, even where there are railways, may be required to be carried a longer or shorter distance on the backs of men or mules, and that where there are no railways this is the almost universal method of transportation.

In loading and unloading cars the ordinary truck is seldom used; the goods are taken up bodily and carried from the station to the car, or from the car to the station, and if they are to be taken to points remote from the station, they are usually taken on mules. The necessities of the case demand, therefore, that the package should never exceed 150 pounds in

weight, except where the nature of the wares shipped renders the reduction of the package to this size impossible. If, instead of this arrangement, a package of 400 or 500 pounds reaches a point from which it must be carried by men or animals, it will have to be broken into several bundles before it can be transported to its destination; and it requires only a little observation to be able to appreciate what is likely to happen to packages of goods broken in transit in any Spanish American country.

One result we may count on with much certainty: the next time the consignee wishes goods he will send his orders to another house, and probably to another country. In the matter of adapting themselves to the peculiar conditions of Mexico and of Spanish America in general, the traders of the United States appear to have shown less quickness and sagacity than the members of certain other nations; but, having found out that there is something to be learned, they are now learning it rapidly.

On the extension of cultivation the direct influence of the railways is clearly discernible. Persons who had lived in that connection with the rest of the world which proximity to the railways gave them, were naturally reluctant to involve themselves in agricultural enterprises

far away from the means of rapid transportation. But it is by such persons that the recent extraordinary demand for agricultural lands has been made; and this demand has been largely induced by the construction of railways that in the last few years have brought large tracts of productive land into easy communication with the rest of the world.

Conspicuous among the railways that have of late opened new fields for agricultural enterprise are the Mexican Southern, the Inter-oceanic and the Guadalajara branch of the Mexican Central. The Mexican Southern is one of the latest ventures in railway building in Mexico. Maintaining a general direction toward the southeast, it runs through a rich agricultural region between Puebla and Tehuacan, then descends into an interior valley, which is only about 1,500 feet above the sea. Here the cocoanut flourishes, and the mango and the banana thrive with apparently little aid from cultivation. As we are here under about the seventeenth degree of latitude, it is somewhat warm, as might be expected, but it is not oppressive. Even in midsummer it is not disagreeable. With the surrounding mountains, which are completely clothed with foliage, sending down abundant streams of water, there are on all sides the suggestions of a tropical par-

adise. From this region the road leads up through a deep and crooked canyon to the summit of a ridge 7,000 feet high, which is here the watershed between the Gulf and the Pacific. At this point of advantage a magnificent view toward the south is spread out before us, over hills that are green with the freshness of spring, over valleys of waving corn, and on toward the ocean. By the building of this railway the rich valley of Oaxaca is brought within an easy day's journey of Puebla, whereas formerly it was reached only after a week's journey over a hard road.

The Guadalajara branch of the Mexican Central has not only brought railway communication to the third city of the republic, but has also made readily accessible an extensive and productive agricultural region. It is in this part of the country that the oranges are produced which have lately begun to be shipped to the United States. The time of shipment is, however, such that should the amount greatly increase it would not be likely to interfere with the market of the California crop. But at present it is not the cultivation of the orange but of coffee that is attracting special attention. The possibilities of the western slope with reference to this product are but imperfectly determined, while on the eastern slope

much progress has already been made. The completion of the Interoceanic Railway to Vera Cruz, through Jalapa, has made more accessible rich coffee lands that are already cultivated and others that will hereafter be brought under cultivation.

Among the reasons for supposing that lands not at present cultivated will be found suitable for raising coffee and brought under cultivation is the extraordinary profit which the production of coffee offers. The cost of its production in Mexico in general is between eight and ten cents a pound in Mexican money, and it sells at from twenty-five to thirty-two cents. Another consideration pointing to the same result is the probable diminution of the production in Brazil.

Hitherto Brazil has produced about one-half of the coffee that has been consumed in the world. It is clear, therefore, that any serious interference with the conditions of production in that country would open extraordinary opportunities for other countries. Probably the most violent shock which the economic interests of Brazil have suffered in this century has been caused by the emancipation of the slaves, of whom about 284,000 were engaged in the cultivation of coffee, working from twelve to fourteen hours a day. As long as those con-



ditions of labor continued which existed prior to the emancipation of the slaves, Brazil was naturally not regarded by the laborers of other countries as a favorable place to which to emigrate.

Thus, without European colonists seeking independent farms, the ownership of land drifted more and more toward large possessions. When the slaves were emancipated, their first disposition was to avoid work and to fall into indolence and general worthlessness, and the large estates consequently found themselves with a diminished force of laborers. The government undertook to remedy the evil by introducing Chinese. One of the Ministers, in 1879, advocating this measure, said that "the government, having little hope of saving the cultivation of coffee by means of European colonists, directed its view toward China, with the design of introducing from that source agricultural laborers who might replace the slaves." He did not regard the introduction of the Chinese as a part of a process of colonization, but only as furnishing an addition to the labor force; and the government, as he confessed, turned its attention to this source "because it was convinced that there was no other available."

The plan was carried out against great opposition, but the Chinese introduced remained only



a short time on the coffee plantations; they then fled to the cities, where they became laundrymen and were engaged as domestic servants.

One phase of this embarrassing state of things was an enormous increase of mortgages on the coffee plantations. By 1883 the 1,039 plantations in the region about Rio and Santos had become burdened with claims amounting to \$24,707,015. This creation of large permanent obligations, for the payment of which the estates were pledged, stands in strong contrast with the earlier practice, under which comparatively small sums were borrowed for short periods on simple promises to pay, and were promptly paid with a part of the proceeds of the first succeeding crop. The new condition of things indicates such a decline in production that the borrowers have found themselves unable to liquidate their obligations, and are forced to carry them as permanent burdens. And in later years the affairs of the planters of Brazil have shown no especially marked improvement. At present twenty per cent. of the plantations are practically free from debt, thirty per cent., in case of liquidation, would scarcely be able to meet their obligations, and fifty per cent. are in a hopeless condition.

The recent rise in the price of coffee is partly

due to the desperate situation of the Brazilian planters, and partly to the very marked increase of consumption in the United States and the European nations. The increase in annual consumption in these nations from 1873 to 1882 was 257,347,273 pounds, which is to say that Italy, France, Russia, Norway, Sweden, Switzerland, Austro-Hungary, Germany, Portugal, Belgium, England, Holland, Denmark, and the United States consumed in 1882 upwards of 250,000,000 pounds of coffee more than in 1873. The next decade witnessed an even greater increase in consumption. The consumption of 1892 exceeded that of 1883 by 400,000,000 pounds; and there is reason to expect, with the prospect of Russia and Spain becoming coffee-drinking nations, that the increase in consumption in the future will be even greater than in the past.

These facts indicate that the present extraordinary demands for coffee lands in Mexico have a certain reasonable foundation. Even should Brazil escape from her difficulties with respect to labor, the greatly increased consumption of coffee is likely to keep its price near its present figure for at least a number of years. As the ills of Brazil are not merely economic but also political, the hopes of a speedy recovery are not strong. In the con-

test for some share of the gains of the existing market, Mexico has important advantages. She has an extensive territory adapted in soil and climate to this form of cultivation, and, in the Indians, an excellent body of laborers, perhaps better fitted for this kind of work than the ordinary laborers of any other country.

A reference to the statistics of the exportation of coffee from Mexico shows that whatever may have been the price the amount exported has continued to increase. From an examination of the details of these statistics we get the following general results, showing the number of pounds of coffee exported from Mexico in each of the years 1873, 1883, 1889, and 1890:—

	Pounds.
In 1873.....	1,432,100
In 1883.....	18,598,419
In 1889.....	21,755,956
In 1890.....	27,797,056

From this statement we see that the annual exportation of 1873 was 1,432,100 pounds. In the course of ten years the amount of the annual exportation had increased to such an extent that in 1883 it was 17,166,319 pounds more than in 1873. In 1889 the exportations were 3,157,537 pounds more than six years earlier, in 1883; and in 1890 they were 6,041,100 pounds more than during the previous year.

If, in want of the exact figures of the most recent years, we assume that the annual increase of exportations since 1890 has been what it was during the year 1889-1890, we shall reach the provisional statement that the exportations for the year ending in 1895 will amount to 58,012,556 pounds.

The cultivation of coffee and other exportable products is favored at this time, in order that they may be sent abroad to liquidate foreign obligations, and thus prevent the exportation of silver at its present low price. This appears to be a kind of generally accepted policy. If this design of exporting agricultural products and manufactured commodities to pay for imports and meet the interest on foreign loans is carried out, the result will necessarily be a state of things apparently not foreseen here, at least not brought forward in the optimistic views set forth. Hitherto silver has been exported because it has been the cheapest thing Mexico could produce which was largely demanded by foreigners; and thus, in spite of the enormous production, it has not accumulated in the country to such an extent as to affect the currency seriously by causing an undue inflation. Hence, considering only the immediate past and only one phase of the economic forces in operation at present, there

has come into existence in Mexico a feeling of remarkable hopefulness with respect to the future, which does not appear to be entirely justified. For, in financial affairs, the immediate effects of a policy are not adequate grounds of judgments respecting the merits of that policy.

The immediate effect of any form of inflated currency is to stimulate economic activity. Whether the sudden overabundance of money is caused, as in Germany after the war with France, by the importation of a large amount of gold, or by importing or mining and coining a large amount of silver, or by issuing an inordinate amount of paper money, the immediate economic effects are essentially the same,—a feverish activity, in which enterprises of various kinds are set on foot, through which it is hoped to get some part of the gains that appear unusually large and easily earned. This movement goes naturally to the point where the extraordinary amounts of capital invested fail to bring the expected returns; and there follow losses from disappointing ventures, consequent failures to meet obligations, an inevitable subsequent shrinkage, and the other characteristic and familiar features of a commercial crisis.

Any artificial stimulus of production, if car-



ried far enough and rapidly enough, whether caused by an increase in the amount of the currency, or by stopping the preëxisting currents of imports, will lead to the same result. The decline in the price of silver has operated in both of these ways in Mexico. The inflation, however, has not been very great. It has come only in proportion to the unusual amount of silver that has been retained in the country by reason of the substitution, in the list of exports, of other commodities for a certain part of the silver usually exported. In the other way the fall of silver has been much more influential. By making it impossible to get from foreign countries more than about one-half as much for a dollar as formerly, it has practically doubled the protective force of the legal customs duties.

By this means it is expected that the imports will be greatly lessened; and by the stimulated production of coffee and other commodities it is hoped that the foreign obligations thus lessened will be met. This avowed design leaves the silver in the country. If, then, the mines continue to be worked, and the mints continue to coin the silver, the inevitable result will be a rapid increase in the amount of money in the country. And there is every reason to suppose that both of these things



will continue to happen. A rapid rise of prices will, therefore, surely follow, unless the increased business, by its demands for a more abundant circulating medium, will absorb the great stream of coin flowing from the mints. And this is not to be anticipated, for several reasons. In the first place, because of the enormous amount of silver produced and passed from the mines through the mints. This amount for the sixty-seven years from 1822 to 1889 was \$3,371,647,269, exceeding the total present value of all the property of Mexico, public and private, set down at \$2,200,000,000, by more than one-half of this sum, making an average yearly coinage of over fifty millions of dollars.

If, in spite of revolutions and general insecurity of property, there have been coined over fifty millions a year for the last sixty-seven years, we have reason to expect a larger rather than a smaller sum in the coming years. In the second place, it is not to be expected that the increasing business will absorb the annual product of the mints, because with the placing of the business of Mexico on the basis of modern commercial nations, credit will be much more extensively used than formerly, and this condition of things is already beginning to be manifest. In the third place, it will not hap-

pen, because of the decline in the amounts hoarded on account of greater public security and the introduction of new methods of business.

It thus appears that the substitution of coffee or other products for silver in the foreign exchanges will leave the silver in the country, and inevitably bring about a local depreciation of it. This will result in a general increase of prices, diminishing somewhat, particularly as it affects wages, the extraordinary advantages which those who produce in Mexico for a foreign market now have. The advantages will, however, disappear slowly, for labor follows the upward movement in the prices of other things. Here the wages of ordinary labor are especially slow in rising, owing in part to the fact that the Indians who perform this work are to such an extent a class apart that they form almost a separate nation, with respect to the rest of the nation practically a non-competing half. Consequently the producers who employ this labor, as do the coffee planters almost entirely, will retain the existing advantages by so much the longer.

The part of Mexico reached by the western branch of the Mexican Central Railway, which at present ends at Guadalajara, is one of the most fruitful provinces of the country. In a

book called a "Geographical Description of the Indies," which was written more than three hundred years ago, and which has lain in manuscript until it was printed last year, the author makes the following reference to this region: "The temperature of this province," so runs the description, "is rather cold than hot, and is thus a healthful region. It rains and thunders much in the months of June and July, and there are severe earthquakes. The soil of the province is sandy, and thus it is never muddy. There are many springs and rivers, and the land is rather uneven than level; and there are also great mountains of a porous rock, not suitable for the purposes of building; there is much limestone but no gypsum. There are in the province, as in other parts of the kingdom, mines of silver, although all poor; there is much pasture and meadow land, some of which is irrigated, and there is a disposition to extend this; and thus it is very fertile and productive of corn and wheat and all the grains and vegetables of Spain." Since this brief description was written, three hundred and twenty years ago, there has been time to write a better one, but it has not yet appeared.

In the beginning the growth of Guadalajara, as it was the center of an agricultural region,

was necessarily slow. But Zacatecas, founded later in a rich mining district, grew much more rapidly. In the course of time, however, Guadalajara became a political capital. It was the seat of the judicial and administrative body known as the *Audiencia*, and thus the center of the ancient kingdom of New Galicia. This advantage it has retained; since the establishment of the republic of Mexico it has been the capital of the State of Jalisco. But something more than politics has been necessary to make it the rich and prosperous city of to-day. The source of this wealth is the fertile land of the adjacent region, which will produce in abundance almost everything that has ever been cultivated. Hitherto the amount of the production of this region has been limited especially by two things: By the difficulties of reaching a market, and by the possession of land in very large tracts free from taxation.

Before the railway penetrated this part of Mexico, certain things which might be produced here in practically unlimited quantities were cultivated only to a very limited extent. The orange is perhaps a good illustration of this. The considerable and increasing shipments that have already been made in the last few years furnish no indication of the capacity of the province in this respect; they are scarcely more

than the surplus which was wasted under previous conditions. As long as it was very difficult or impossible to ship the portion of any product that was not demanded for local consumption, there was certainly no inducement to increase the amount of the production. The railway has relieved this condition of things to a certain extent; but there are still needed in this part of the country branches of the existing railway from twenty-five to a hundred miles in length to bring better means of transportation to rich and extensive lands which at present are only imperfectly cultivated.

The other hindrance to the agricultural development of this most favored region is the existence of very large estates, the land of which is free from taxation, only the products bearing a tax. This hindrance exists not merely in the neighborhood of Guadalajara, but throughout the territory of the republic. Although there may be large estates in all parts of the country, yet the magnitude of the evil in different places varies with the different kinds of cultivation. The highlands between Puebla and the City of Mexico, which appear to be especially useful, and perhaps only useful, for the production of pulque, may be most advantageously managed in large tracts. In the profits of the business there is a sufficient incentive to



keep the territory fully planted. But this is not true in some other kinds of production, where the expenses are nearer the gross returns, particularly where the land is owned not for the sake of the maximum revenue, but as a family endowment that may be held from generation to generation as a means of assuring to the family its present economic and social standing.

One observing these vast estates, which embrace from twenty-five to five hundred square miles, large parts of which may be neither increasing in value nor bringing an annual return from cultivation, naturally thinks of the advisability of selling them or parts of them, and so investing the money that it may bring an income. He may, perhaps, expect to see this result speedily brought about; for he sees in this course abundant gains for the owner instead of the comparatively meager gains of the present, and he relies upon what he calls the economic forces to effect this change. If he has faithfully accepted the one-sided political economy sometimes taught, he will conclude this must be, since there is a great pecuniary advantage in this line of action. But it is the rare man who moves in the line traced by the earlier economists, and it is particularly not the mediæval man who survives in the person of the great landholder of Mexico.



A student of the conditions of rural Europe in the Middle Ages would find great enlightenment in a few weeks on one of these great estates. In the residence of the proprietor he would find himself walled about in a manner to suggest the stronghold of the mediæval baron. The extent of the estate he would find not less than that of the barony, and the authority of the later lord equal to that of the earlier. He would find the peons, who live on the estate, as dependent as were the serfs, and their methods of working quite as crude. Contemporary illustrations show the mediæval serf working with a rude hoe, but the Mexican serf in completing the work of cultivating the corn after the plow, often uses only his hands. The desire of the modern feudal lord, moreover, to preserve his estate entire for his descendants, regardless of economic considerations, appears to be as strong as it was in his European predecessor; and it is this which stands as the chief hindrance to a speedy revolutionizing of rural life and cultivation in the especially fertile parts of the country, such as the region about Guadalajara, or on the eastern slope between Tampico and San Luis Potosi.

It is clear, therefore, that, while the building of the railway sets aside one of the hindrances to more extensive cultivation, the other re-

mains. The owners of the large estates are several degrees removed from the "economic man" of the economists. They do not proceed in the line of the greatest pecuniary gains.

The satisfaction of mere possession, and of the thought that the later generations of their families are assured independence, counterbalances all other considerations. If they produce enough for their own wants and the maintenance of their numerous servants and other dependents, they find no inconvenience in the fact that a large part of their lands are not under cultivation, and produce little or nothing. If they produce nothing, they are not taxed. Taxes come only with production. The obstacles to more extensive and complete cultivation involved in this system may not be removed by showing that superior economic gains would be had in case of their removal, for, as suggested, the proprietors are not amenable to the consideration of maximum gains.

If Mexico's rich lands are to be fully utilized and abundance to reign, her mediæval system of landholding and agriculture must be modernized; the great estates must be divided, and the prize of independence held out to the agricultural laborers. This is not a statement based on mere speculation; it is emphasized

and confirmed by the affairs of every nation that has achieved for the bulk of its citizens a noteworthy degree of prosperity. And the means are not in the hands of private persons or railway corporations, but in the hands of the government, and should be applied in the form of a general tax on land, sufficiently heavy to make it extremely inconvenient for one to hold thousands of acres of fertile land without cultivating it or putting it to some productive use. But here is the rub; the government is an oligarchy, topped by a despot, and the members of the oligarchy, or the class to which they belong, are the great landholders, and naturally have no desire to impose a burden on land which would make the holding of their estates in their present form practically impossible. Yet this measure properly carried out would enable the government to relinquish some of its petty imposts on manufacturing and trading, which at present discourage business without bringing to the state large returns. It would, moreover, tend to throw certain lands into the market in those parts of Mexico which are most desirable as places of residence.

But there are certain forces at work, which, even without a tax, will tend to bring Mexican lands into the market and cause them to be

divided. One of these is the railway companies, who are directly interested in having this end reached. They are interested in it because it will increase their local traffic in both freight and passengers; and most of these companies have had already sufficient experience in their business to be able to see clearly that they must rely for the support of their undertakings on the local instead of the "through" traffic. The railway company in Mexico, that bases its expectation of a degree of success superior to that of the other companies, on the fact of having the shortest line between New York or Chicago and the City of Mexico, is bound to be fooled, unless it has equal or greater advantages than the other companies in local business.

These facts clearly seen are leading some of the companies to put forth extraordinary efforts to secure such control of lands adjacent to railways that they may sell them in tracts of the sizes desired by immigrants. The railway companies or other combinations of capitalists in which the railway companies are interested, are the only persons who are in a position to make the original purchase; for in some places, if the sale is made at all, the whole of an estate of say two hundred and fifty thousand acres must be sold. The rail-

way company or a syndicate must be the middleman, and it may be expected to make a profit on the portions sold. This will be necessary to cover the loss of holding comparatively worthless tracts that remain unsold, or if sold bring not more than the original purchase price. If a railway company thus becomes a trader in real estate, it will expect a permanent source of gain in an increase of its regular business.

A syndicate has nearly completed its negotiations for the purchase of a large estate on the line of the Tampico branch of the Mexican Central Railway, which embraces a magnificent valley at the bottom of the first great descent from the table-land. It ought to be attractive to settlers, if soil and climate and scenery can make any place attractive; and if things cultivated will grow as things uncultivated now grow, it ought to be easy there to gather the means of a comfortable existence. The region farther down towards the Gulf, through which one passes on the journey from San Luis Potosi to Tampico, comes nearer to one's ideal of tropical scenery than that presented almost anywhere else in Mexico—the forests apparently impassable for their abundance of tangled vines, the brilliant flowers scattered here and there in the dark green foliage, and the wide stretches



of country in which the tall and dignified palms are the conspicuous objects.

The part of Mexico tributary to Guadalajara has not only almost unlimited agricultural resources, but also excellent opportunities for manufacturing. A few miles from the city there is a fall in the largest river of the country, which some persons, by a powerful effort of the imagination, like to call the Niagara of Mexico. It has been utilized to a certain extent, but only a very small fraction of its power developed. It runs certain mills in the neighborhood; it furnishes the electric light of Guadalajara; and there appears to be no reason why the whole system of street cars might not be driven by power from the same source, and still leave enough for many years of industrial growth.

The recent progress in manufacturing cotton goods in Mexico has raised inquiries concerning the raw material and the resources of the country respecting this form of agricultural produce, and a reasonable conclusion is that the records give us no information of a period when cotton was not cultivated here. The Spaniards found it under cultivation on their arrival, and among the presents which Cortes received shortly after he had destroyed the city of Cholula were 1,500 suits of cotton clothing. They found it not



merely in a few places, but throughout almost all the territory which at present belongs to the republic, and it was even in use by the Indians of California. Articles of cotton figure in nearly all the presents received by Cortes from the natives, and they were found among the first presents sent by him to the king of Spain. So numerous are the evidences of the use of cotton by the Indians that it has been affirmed that it was more extensively cultivated before the conquest than during the period of Spanish domination. In the latter period the Indians, who had previously worked independently, were reduced to slavery in the service of the invaders, and called away from their customary occupations and compelled to follow the directions of their masters, under whom agricultural interests were neglected and the cultivation of cotton declined. The last century of Spanish rule witnessed, however, an improvement in agriculture and in the condition of the Indians, not so much on account of improvement in the laws as on account of the fact that these laws were not enforced with rigor.

The repressive system had proved itself an economic blunder, and with the return of the inhabitants to a larger degree of freedom there was an increase in nearly all kinds of produc-

tion, and in the production of cotton with the rest. To such an extent was the production of cotton carried on in the last years of the old régime that it entered as an important item into the trade with Spain, but on account of the great cost of transportation by land, only planters near Vera Cruz were able to obtain any considerable advantage from this trade. The amount sent to Spain in 1761 was only 3,350 pounds, while in 1810, about fifty years later, it amounted to 505,200 pounds. These figures are not necessarily in the ratio of the amounts produced, for in the intervening period the new commercial code between Spain and her colonies had established almost complete freedom of trade, and by this had greatly increased the shipments of wares both ways. In the seven years from 1802 to 1808 inclusive, Mexico imported cotton goods to the value of \$13,152,416. The freedom of trade which the colonies enjoyed in the last years of Spanish rule not only increased the importations but also the amount of domestic production.

In the early part of this century cotton was produced in nearly every State of Mexico, but only a limited area in some of the States was suited to its cultivation. The regions especially adapted to it are three,—the lower portion of the slope toward the Pacific, the gulf coast, and

an interior district lying between Saltillo and Chihuahua. The different parts of these several regions are not of uniform importance. In the gulf district the best lands are found in the State of Vera Cruz. Yet, during the war between the Northern and Southern States of the Union, the State of Tamaulipais produced large quantities of cotton, through which the producers made large gains. But the return of peace and the revival of the South deprived this region of its importance in the production of cotton. The amount raised declined from year to year, and fell, in the course of time, to almost zero. With the view of bringing about a revival, the government, in 1882, instituted inquiries and experiments to determine the best means of restoring the early prosperity, but without noteworthy success. In the State of Vera Cruz, however, the cultivation is still continued, the annual production amounting approximately to 25,000,000 pounds, and with prospects of extension.

On the side of the Pacific the territory adapted to the cultivation of cotton is much more extensive, but less fully developed. It embraces a strip of territory 100 miles wide, more or less, reaching from Hermosillo to the border of Guatemala.

The progress of cotton planting in this west-

ern region, as well as the progress of civilization generally, has been greatly impeded by the lack of means of communication. Of the large number of companies that have received concessions from the government to construct railways to the Pacific, no one has as yet fulfilled the conditions. The only means of transportation between the cities of Central Mexico and the region along the Pacific is still the mule train, and as a consequence there are few signs of progress here that have not been observed during the last 300 years. Under such conditions corn and fruit are almost the only things cultivated, and these because they are the principal items of food, and, for a large part of the population, the only food. For these products there is a local demand, each community consuming the whole or a large part of its product. Cotton, on the other hand, under the new conditions of manufacturing, has need of transportation, sometimes over long distances, and this, in view of the existing want of facilities, is an effective discouragement of its production.

The existing system of cotton manufactures in Mexico had its origin in the decade following the achievement of political independence. Lucas Alaman, the historian, then minister, was influential in bringing it into existence. The first mill for spinning and weaving was built in

Puebla, and was called "La Constancia." Somewhat later, in 1835, another mill was established in the same city, and called "El Patriotismo," and at the same period the mill called "La Magdalena" was built in the little town of Tlalpam, in the valley of Mexico. In the beginning the development was slow, but in the last few years the number of mills has increased rapidly, and at present there are in the country ninety-eight establishments of sufficient importance to be properly termed cotton mills. As early as 1842 an experiment in making prints was undertaken in Puebla. Other attempts were made in 1860, but they led to no permanently valuable results; in fact, little of importance in this line was done till 1870, and it was eight years before there began to be observed a diminution in the importation of European prints. At first the mills were established only in the capital and neighboring towns, for the spirit of enterprise was found concentrated here; but in the course of time this spirit has extended itself to the outlying parts of the republic, and at present there is no part of the country that has not its cotton mills of greater or less importance.

An apparently sober-minded Mexican concludes a discussion on this subject by saying that "we have immense territories suited to the



production of cotton, which are still uncultivated, so that it is possible to raise the production of cotton to a very respectable figure. Continual political dissensions, the want of means of communication, and, above all, the practice which is followed in the cultivation of cotton, are the things which have contributed especially to the low state in which the cotton industry has been found. We have, however, to-day, fortunately entered upon a new era of beneficent peace; the ways of communication are becoming easier, circumstances which tend to the advancement of the industry in question. But there is still something wanting; the cultivators must abandon their methods, and undertake their agricultural work in the light of the most advanced knowledge; they must learn new methods, and inform themselves how to overcome the difficulties of this form of cultivation. When this happens, there will unquestionably come an increase in the production of lands already cultivated, and the area of cultivation will be extended. Then Mexico will occupy a very high place, if not the first place, among the cotton-growing countries." This last expression may, perhaps, involve a slight exaggeration, and more or less ignorance of the resources of eastern Texas, but it indicates the strong conviction of one who has wandered over a large portion of his country for the purpose of investigating its resources in this regard.



## CHAPTER IV.

### THE CITIES.

MUCH light may be thrown on the character of the economic revolution now in progress in Mexico by observing also what Mexican cities were before railways reached them, and what they are now becoming under new influences. Their conditions were unlike the conditions of either those cities of the United States that have recently grown into importance, depending in the beginning on older centers of population, or those that existed in the eastern part of the country before railways were built. The difference between them and the more recently developed American cities is the difference between an independent growth and growth fostered from some external source. The points in which they differed from the American cities of the period before the railway are mainly two: They were more completely isolated and compelled to be self-dependent, and their inhabitants comprised two classes distinctly separated by different race characteristics, the

very large majority of whom were Indians. It is not to be supposed that in Mexico the new order of things introduced by the means of rapid transportation is to be equally advantageous to all places. Towns that have already been developed in Mexico have grown in obedience to forces that will not necessarily remain the dominant forces. The currents of trade and the centers of distribution are not necessarily the same before and after the introduction of railways. A town, by reason of its position and the energy of a few of its inhabitants, may become an important distributing center; its merchants may hold large quantities of goods in stock, and may supply the dealers in the towns of the adjacent region. The building of a railway to that town, and through the region which has become tributary to it, may destroy its trade and its relative importance at a single blow. The dealers in other towns, who have been its customers, are enabled to go directly to its source of supply. In this process of developing a few large centers of trade, some of the hitherto existing smaller ones are either left stationary or caused to decline.

Probably the present condition of no Mexican city illustrates the early condition of all of them better than that of Oaxaca. It has been easily

accessible for so short a period that its circumstances are essentially what they were before the railway was built. Through three centuries of its history it has grown as an interior town, in the fullest sense of that term. It lies in one of the most beautiful and fertile valleys of Mexico, or rather at the meeting point of three valleys. It is shut off from the ocean on the south by a solid range of mountains; it is separated from the cities of Central Mexico on the north by a mass of rough and broken country. The region of which it is the center is a part of the world by itself, and the community which occupies it is practically a self-sufficing body of people. The population has grown so slowly through its long existence that it has learned to satisfy its wants, as they have appeared, by its own products. The hand looms which have been used for generations are still used. The pottery which the inhabitants of this region must have learned to make centuries ago, is still made and turned to all conceivable uses, from cooking stoves to children's toys. Articles made from the potter's clay serve most of the purposes of our articles of iron or tin or wood or brass. If you wish a bell, you will buy it of the potter. If you wish a whistle, you will buy it of the potter. If you wish tiles to cover the dome of the cathé-

dral, you will buy them of the potter. In fact, from the great variety of uses to which the potter's clay is put, we readily see that life before the iron age was not necessarily mean. Other apparently simple materials are also made to serve a large number of ends. The maguey plant is a familiar instance of a single kind of material put to a multitude of uses. So skillfully, under the pressure of necessity, have the resources of this region been utilized, that if a wall of absolute exclusion were built along the ridge of the encircling mountains, the life of the community would go on without noteworthy inconvenience to the bulk of the inhabitants. The well-cultivated cornfields would produce, as they do now, an abundant supply of the staple food. The flocks and the herds would multiply, as they do now, and their skins would be turned into sandals, shoes, and other articles of clothing. On the physical side there would be few wants unsatisfied. As now, few would be rich, and each would have something.

This condition of Oaxaca is typical of the condition of all Mexican towns that have grown up where they are by reason of their rich agricultural neighborhood. When the railway first reaches them, they have no use for it. Their produce and manufactured articles have their long-established currents of move-

ment, and the inhabitants themselves have no desire to make long journeys. This condition of things is the basis of the remark by an engineer who has had great experience in locating railways in Mexico, that it is never worth the while to go out of the way to reach a Mexican town, but quite worth a special effort to reach the great plantations. This would be permanently true if the towns were to remain as the railways find them. But they do not so remain. The coming of the railway means for the town a transformation of its life. We may examine the case, and, perhaps, reach the conclusion that the transformation is not desirable; that it means loss of original character and consequent deterioration. Nevertheless, the change will come. The railway remains and creates a demand for its services; it carries wares from without into the town, which from being at first luxuries become necessities. Some domestic manufactures decline, other lines of production are stimulated; and the buying and selling of goods become more conspicuous features of the town's life. With a more extensive use of things from without there arises the desire to see some part of the country beyond the immediate horizon. Thus the town grows away from its original character, and becomes merged in the larger life of the country or the world.



But this transformation does not come suddenly with the appearance of the railway. Long after the new means of transportation have been established, we find some part of the trade of a region running in its old channels. The Indian and his donkey are the persistent rivals of the railways; and the Indians without donkeys are carriers with whom it is hard to compete. Even such cheap and heavy goods as coarse terra-cotta jars are still carried by men from the valley of Toluca to the City of Mexico, along the highway which, for some part of the distance, runs parallel with the Mexican National Railway.

The case of Oaxaca is still not quite typical; its extreme isolation and the productiveness of the surrounding country have made its condition different, on the one hand, from that of towns like Jalapa and Orizaba, on the great ancient highways, and, on the other hand, from towns like Zacatecas and Guanajuato, which are great mining camps of long standing, and have come into existence without reference to the agricultural qualities of the adjacent territory.

In the ancient days there were two roads leading from the port of Vera Cruz to the City of Mexico, and the principal towns through which these passed, Jalapa, Orizaba, and Puebla,



were naturally more or less in touch with one another and with various points of the world beyond. The traffic which passed over these roads and through these towns made them less isolated than Oaxaca, and suggested that by producing for others than their own inhabitants they might have some part in the advantages of this traffic. Thus, when they were reached by railways, they had made some progress in trade beyond their borders.

Jalapa became the seat of a fair in the eighteenth century, which was intended to hold the same relation to the trade between Spain and Mexico that the great fair at Porto Bello, on the isthmus, held to the trade between Spain and South America. In order to avoid the effects of the unwholesome climate of the coast, goods arriving at Vera Cruz were transported to Jalapa, to be there exchanged for Mexican products destined to be exported to Spain. Jalapa was chosen for this purpose, although an inland town, because of its agreeableness and healthfulness as a place of residence. It lies among the hills about half way up the eastern slope. It is sufficiently warm to permit many tropical plants to thrive, and, as it is favored with rain at all seasons, the neighboring valleys and hillsides are perpetually fresh and green. From the plaza, where one

has the higher part of the town above him, and overlooks the lower part and the broken country in the distance, the world appears a very beautiful place. Persons arriving from Spain were accustomed to come immediately to this place to rest after the long voyage before completing the journey to Mexico; and here those intending to depart for Spain waited till the vessels were ready to sail, as the old geographer, Velasco, puts it, "in order not to be in Vera Cruz, on account of the danger of becoming ill." And the town has kept this character. Although great wealth is produced on the coffee plantations not far away, still Jalapa does not figure as a center of commerce or manufactures, but as a resort for pleasure, or a place of waiting till the ships go out. And in this character it is becoming more conspicuous since the completion of the Inter-oceanic Railway from Mexico to Vera Cruz, which, in descending from the table-land to the coast, passes through Jalapa. As a sign of this change, one of the old hotels has taken a new name, and has become the Grand Hotel, with all the solemn pretensions, the mingled subserviency and impudence, and the multitudinous extras which that title attached to a hotel for tourists often implies.

The old roads from the coast to the capital

have been supplanted by the railways, the northern, that passing through Jalapa, by the Interoceanic; the southern, that passing through Orizaba, by the Mexican Railway. Orizaba, like Jalapa, lies about midway between the two extremes of the coast and the plateau, but in most other respects the two towns stand in sharp contrast with one another. At Jalapa the view ranges over a wide extent of hills and valleys; at Orizaba it is limited by the closely surrounding mountains. Jalapa has apparently few and unimportant industries, while Orizaba is one of the busiest manufacturing towns of Mexico. Its cotton and jute mills employ a large number of laborers. Lying on the line of the oldest railway in the country, not far from Vera Cruz, and with easy access to the interior cities, it has unusual facilities for obtaining imported raw material and for reaching markets for its finished products. The rapid stream which passes through the valley furnishes adequate water power, and in this lies one of its special advantages as a manufacturing town; for one of the serious problems of manufacturing in Mexico is the problem of fuel. Whoever will solve this problem will not only have an easy opportunity to acquire a fortune, but will also give the industrial development of the country a powerful stimulus. Certain

patents have already been issued for making a composite fuel, with peat as a basis, and one of the attempts under these patents is in an advanced stage of experiment. The peat is to be obtained from the marshes near the lakes in the valley of Mexico. At present the persons having this enterprise in hand fix no price for their product, but offer to those using fuel for mechanical purposes to do the work at ten per cent below the present cost. If successful, this undertaking will be of importance even to some places where water is ordinarily used as a motive power; for in places like Orizaba there are sometimes periods of drought when it is necessary to resort to steam, and also periods of too great abundance, when the stones and débris of various kinds brought down render the use of the water at least inconvenient.

In addition to her cotton and jute mills, Orizaba is also taking a hand in one of the newer industries of Mexico,—that of brewing beer. This enterprise is conducted by Germans, and they claim for it a special advantage in the excellence of the water obtained. The demand keeps pace with the production, which is good for the business, but bad for the beer. But the beer of Toluca appears to have the widest market. It is found wherever the means of transportation have made it feasible to carry it.

Men, women, and children run about with it at the railway stations, offering it for sale, and even the pulque venders are not more energetic in their attempts to secure a market. It seems to be the growing fashion to drink the beer of the country, and the fashion is undoubtedly encouraged by the fact that it sells for half the price of imported beer.

The success of this undertaking is in part due to the fact that at present the Mexicans are looking for a drink. The use of pulque is almost limited to the comparatively small part of the country where it is produced, on account of the impossibility of keeping it, except for a very short time, after it is ready for use. The railways have extended somewhat the territory of its consumption. It may now be carried from the plantations near Puebla to Oaxaca, which, before the building of the Mexican Southern Railway, was without the limits of the pulque region. But, after all, it is the drink of the Indians, and this means much in Mexico; it means that the classes socially above the Indians must have something else. Hitherto some form of brandy, or a miserable concoction called French wine, has been extensively used, and if the brewing of beer will furnish a partial substitute for one or both of these, the effort will be in the line of reform.



But the cities of Central Mexico which appear to have felt especially the force of the new stimulus are Puebla and the City of Mexico. Both are points from which a number of railways radiate. From Puebla the Mexican Southern reaches Oaxaca, and, in general, Southern Mexico; the Interoceanic runs out in three directions, to Matamoras and beyond on the way to Acapulco, to the City of Mexico, and to Vera Cruz; and the Mexican Railway gives Puebla another line of communication with the City of Mexico and with the coast. These make Puebla, as a railway center, second only to the capital. At present both its population and its industries are increasing, and the variety and distribution of the industries help to give the city an air of general prosperity. Its textile industries are the most conspicuous; in fact, in all parts of Mexico at present this branch of manufacturing is under the powerful stimulus of a high import duty, which is practically doubled in consequence of the fall in the value of silver. In addition to these advantages for the manufacturer, some of the States have granted special privileges to the producers of textile fabrics, such as freedom from taxation, the government granting the privilege, expecting, at least in some cases, that the manufacturer will produce a certain amount,

or supply the local market. The strong demand in the country is for the cheaper articles, such as prints and plain unbleached cotton, the latter constituting the principal part of the clothing of the people. In the cities, however, there is an increasing number of persons who are adopting the European style of dress for men, and this makes an increasing demand for woolen goods suitable for this purpose; and the attempt to supply this demand with domestic products is one of the noticeable recent developments in the textile industries. That profit is coming to Puebla from her participation in enterprises along these lines is clearly evident.

If we may judge from their wares, the manufacturers of Puebla have a liking for strong colors. This is manifest in their brilliant serapes, particularly those made of cotton and intended for the smaller interior towns. Sometimes these colors are combined with great artistic effect. This is especially true in the decoration of some of the products of the potteries. It would be difficult to find in crockery decoration finer combinations of colors than may be seen in the exterior painting on certain bowls made in Puebla. The material is coarse, and the glazing is often imperfect, but those who apply the colors have certainly the sense of color in rare development.

As long as communication was difficult, each district produced the earthenware used by the common people of the district. This local development led to great individuality of design in form and ornamentation, and in some places one can observe the very beginnings of the artistic sense making itself manifest in the products of industry. In some cases the development of this sense has been arrested very early, and what was the beginning of artistic activity has become simply conventional work, in performing which the workers have apparently no thought of further progress. In other cases several steps have been taken. In the little village of San Antonio, near Cuernavaca, the only conception of ornamenting which has arisen in the primitive minds of the potters, is that of pressing into the sides of the jar or dish of whatever sort, before it is baked, small fragments of china or glass, and with these making lines or figures. Sometimes, in the most sublime flights of their artistic imaginations, they arrange these fragments in such form that they present the outlines of a bird or some four-footed beast not distinctly specified. In watching the old women press these small pieces of china into the clay of the unbaked vessel, one observes that there is apparently not the slightest mental effort to depart from the rigid con-

ventional form. The modern artists of Rome or Paris differ from these artists of the mud hovels of San Antonio in that, while they recognize and are more or less dominated by conventional forms, they strive to depart from them to such an extent, at least, as to make their works a variation on the conventional theme. When this striving ceases, art falls to the position of pottery decorating in San Antonio. In Puebla the painting is of a much higher order, although on plates and cups and bowls painted by hand, which sell for two or three cents apiece, it is not to be expected that the painter will lavish a large amount of artistic invention. Yet it is evident from the production of new forms and the variety of decorations that the force of originality is not extinct.

With the development of facilities for transportation there is a tendency to demand certain preferred kinds of wares, although they may not be produced in the district. This leads to the concentration of productive forces at points where the wares demanded are made. The railway, therefore, as it affects these things, brings a stimulus to the production of the preferred articles, and applies a suppressing force to the production of the others, in this way causing in the realm of inanimate things the survival of the fittest.

As might well be expected, the signs of change are more manifest in the City of Mexico than in any other town. As the capital of the kingdom, as the point at which more railways converge than at any other place, and as the principal residence of the wealthy, there are naturally more forces which make for progress operating here than elsewhere in Mexico. It is found, therefore, that in the last ten years important additions have been made to the buildings on the side towards Chapultepec, and the style of them indicates that foreigners have directed their construction. In the central part of the city the transformation is evident in better pavements, better lighting, and finer shops. The prominence given to the industry of making and trimming ladies' hats, where not long since the mantilla and the roboso held the field, is a clear indication that a new age has dawned. In considering the activity that goes on at certain points, one might easily imagine himself in a European capital.

But here where I write, on the shore of Lake Patzcuaro, it would be easy to forget that progress has been made in Mexico or anywhere else. The scene and circumstances are those of primitive society. At different points on the opposite side of the lake, and on the steep slope of the principal island, are Indian villages, where



the life that is lived to-day is essentially the same as that of five hundred years ago; and the features of the scene at this moment are surely of the ancient world. From all points of the lake more than a hundred canoes, or "dugouts," are moving in converging lines to a point on this shore. The modern art of making boats has clearly not influenced the builders of these primitive vessels, which are in the shape of a Chinaman's shoe, except that the width is very much less in proportion to the length. The bottom is flat and the widest part of the craft, the sides sloping inward towards the top. They are propelled not by oars, but by paddles, which consist of a straight stick with a circular disk, of about ten inches in diameter, at the end. They are manned by men and women, or by men or women, as it may happen. Three times a week they make this trip across the lake, bringing their wares to a common market-place, and return late in the afternoon with the produce of their exchanges. The wares which they offer are such as their ancestors might have brought to market centuries before the conquest. In fact, this part of Mexico remains yet to be conquered, if by that term is meant subjected to the forces and laws of progressive civilization. Yet in strange contrast with the products of

this semi-barbarous society, the miserable little village of Tzintzuntzan, on the shore of the lake, possesses the finest picture in Mexico, an excellent example of the work of no less a master than the great Titian.

## RECENT PUBLICATIONS

BY

THE BERKELEY PRESS, SAN FRANCISCO

---

### POLITICS AND ECONOMICS.

**The Railway Revolution in Mexico.**—By Bernard Moses, Ph. D. Pp. 90; price . . . . . \$ 50

**The Federal Government of Switzerland: An essay on the Constitution.**—By Bernard Moses, Ph. D. Pp. 256; price . . . . . 1 50

### MATHEMATICS.

**The Geometrical Theory of Proportion.**—By Irving Stringham, Ph. D. Pp. 20; 1893; price in paper covers, 15 cents; per dozen copies . . . 1 50

**Uniplanar Algebra:** Being Part I of a Propædæutic to the higher mathematical analysis. Contains the geometrical theory of proportion as an introduction.—By Irving Stringham, Ph. D. Price in paper covers, 75 cents; bound in cloth, \$1.00; bound in leather . . . . . 1 25

### PHYSICS.

**Exercises in Elementary Physics.**—By Harold Whiting, Ph. D. Pp. 143; price, bound in cloth, 75 cents; in paper covers, wholesale . . . . . 50

**Questions on General Physics.** — By Harold Whiting, Ph. D. Pp. 233, with 230 blank pages; price, bound in cloth . . . . . 1 50

*Address:*

**The Berkeley Press,**

SAN FRANCISCO, CALIFORNIA.

5448

University of California  
SOUTHERN REGIONAL LIBRARY FACILITY  
405 Hilgard Avenue, Los Angeles, CA 90024-1388  
Return this material to the library  
from which it was borrowed.

Deaton, D

2-8-92

MAY 11 1999

IL: 7975060

**RETURNED**

**MAR 28 2000**

UC SOUTHERN REGIONAL LIBRARY FACILITY



**A** 000 666 339 7



Unive  
Sou  
Li